

Years of Rainfall Required to Reduce Leachate pH of AGREMAX Material to a pH of 8.6

Inputs

Acid equivalents required to achieve pH 8.6	2.5 meq/g	(a)
Annual rainfall	55 in 139.7 cm	(b) Calculated value
Rainfall pH	5	(b)
Acid equivalents	0.01 meq/L	Calculated value
Thickness of AGREMAX application	12 in 30.48 cm	Assumed value Calculated value
Assumed bulk density of AGREMAX	1 g/cm ³	(d)

Results

Net infiltration of rainfall required to achieve desired pH	3000000 inches
Time required to achieve desired pH	54,545 years

(a) Source: EPA LeachXSTM spreadsheet ("AES_PR_1313 locked 121312.xlsx") (Lab Extractions Tab)

(b) Assumes 100% net infiltration. Source: National Weather Service, Average Yearly Rainfall Maps, Mean Annual Precipitation 1981-2010

(c) Sources: E.Osborne, Engineering Research Center, University of Puerto Rico, Acid Rain in Puerto Rico, Final Technical Report to the US Dept of the Interior (1986); National Atmospheric Deposition Program data, available at <http://nadp.sws.uiuc.edu>

(d) Source: R. Carrasquillo & O. Antommettei, Testing and Condition Assessment Results, Projects with Agremax Subbase (Jan. 2011)

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Years of Rainfall Rquired to Reduce Leachate pH of AGREMAX Material to a pH of 7.7

Input

Acid equivalents required to achieve 7.7 pH	3.5 meq/g	(a)
Annual rainfall	55 in 139.7 cm	(b) Calculated value
Rainfall pH	5	(b)
Acid equivalents	0.01 meq/L	Calculated value
Thickness of AGREMAX application	12 in 30.48 cm	Assumed value Calculated value
Assumed bulk density of AGREMAX	1 g/cm ³	(d)

Results

Net infiltration of rainfall required to achieve desired pH	4200000 inches
Time required to achieve desired pH	76,364 years

(a) Source: EPA LeachXSTM spreadsheet ("AES_PR_1313 locked 121312.xlsx") (Lab Extractions Tab)

(b) Assumes 100% net infiltration. Source: National Weather Service, Average Yearly Rainfall Maps, Mean Annual Precipitation 1981-2010

(c) Sources: E. Osborne, Engineering Research Center, University of Puerto Rico, Acid Rain in Puerto Rico, Final Technical Report to the US Dept of the Interior (1986); National Atmospheric Deposition Program data, available at <http://nadp.sws.uiuc.edu>

(d) Source: R. Carrasquillo & O. Antommettei, Testing and Condition Assessment Results, Projects with Agremax Subbase (Jan. 2011)

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Years of Rainfall Required to Reduce Leachate pH of AGREMAX Material to a pH of 6.7

Inputs

Acid equivalents required to achieve pH 6.7	4.5 meq/g	(a)
Annual rainfall	55 in 139.7 cm	(b) Calculated value
Rainfall pH	5	(b)
Acid equivalents	0.01 meq/L	Calculated value
Thickness of AGREMAX application	12 in 30.48 cm	Assumed value Calculated value
Assumed bulk density of AGREMAX	1 g/cm ³	(d)

Results

Net infiltration of rainfall required to achieve desired pH	5400000 inches
Time required to achieve desired pH	98,182 years

(a) Source: EPA LeachXSTM spreadsheet ("AES_PR_1313 locked 121312.xlsx") (Lab Extractions Tab)

(b) Assumes 100% net infiltration. Source: National Weather Service, Average Yearly Rainfall Maps, Mean Annual Precipitation 1981-2010

(c) Sources: E.Osborne, Engineering Research Center, University of Puerto Rico, Acid Rain in Puerto Rico, Final Technical Report to the US Dept of the Interior (1986); National Atmospheric Deposition Program data, available at <http://nadp.sws.uiuc.edu>

(d) Source: R. Carrasquillo & O. Antommettei, Testing and Condition Assessment Results, Projects with Agremax Subbase (Jan. 2011)

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